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SEQUENCE LISTING

<110> KIRIN BEER KABUSIKI KAISHA

<120> A mutant of anti CD40 antibody

<130> PH-2356-PCT

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<150> JP 2003-431408

<151> 2003-12-25

<160> 142

<170> PatentIn Ver. 2.1

<210> 1

<211> 175

<212> PRT

<213> Homo sapiens

<400> 1

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1

5

10

15

Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val Ser Asp Cys Thr

20

25

30

Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu Ser Glu Phe Leu

35

40

45

Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His Lys Tyr Cys Asp

50

55

60

Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr Ser Glu Thr Asp

65

70

75

80

Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr Ser Glu Ala Cys

85

90

95

Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly Phe Gly Val Lys

100

105

110

Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu Pro Cys Pro Val

115

120

125

Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys Cys His Pro Trp

130

135

140

Thr Ser Cys Glu Thr Lys Asp Leu Val Val Gln Gln Ala Gly Thr Asn

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155

160

Lys Thr Asp Val Val Cys Gly Pro Gln Asp Arg Leu Arg Ala Leu

165

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<220>

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39

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38

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<223> Description of Artificial Sequence:Synthetic DNA

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<223> Description of Artificial Sequence:Synthetic DNA

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gttttctcga tggaggctgg gaggcc 26

<210> 6

<211> 38

<212> DNA

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 6

atatggatcc tcatttaccc ggagacaggg agaggctc 38

<210> 7

<211> 26

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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ggcctcccaag cctccatcga gaaaac

26

<210> 8

<211> 36

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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atatggatcc tcatttaccc ggagacaggg agaggc

36

<210> 9

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<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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aggggtccgg gagatcatga gagtgcctt

30

<210> 10

<211> 30

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<223> Description of Artificial Sequence: Synthetic DNA

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aaggacactc tcatgatctc ccggaccctt

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<223> Description of Artificial Sequence: Synthetic DNA

<400> 11

tgatcatacg tagatatcac ggc

23

<210> 12

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<223> Description of Artificial Sequence:Synthetic DNA

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tgatcatacg tagatatac ac ggc

23

<210> 13

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gggtacgtcc tcacattcag tgatcag

27

<210> 14

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<223> Description of Artificial Sequence:Synthetic DNA

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<210> 15

<211> 23

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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23

<210> 16

<211> 36

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acagttgagc gcaaatgttg tgtcgagtgc ccacccg

36

<210> 17

<211> 27

<212> DNA

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<223> Description of Artificial Sequence:Synthetic DNA

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gggtacgtcc tcacattcag tgatcag

27

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<211> 31

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<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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ggtgttgctg ggcttgtat ctacgttgca g

31

<210> 19

<211> 31

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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ctgcaacgta gatcacaagg ccagcaacac c

31

<210> 20

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA

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tgatcatacg tagatatac ggc

23

<210> 21

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<223> Description of Artificial Sequence: Synthetic DNA

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27

<210> 22

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ggtgttgctg ggcttgtgat ctacgttgca g

31

<210> 23

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic DNA

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ctgcaacgta gatcacaagg ccagcaacac c

31

<210> 24

<211> 23

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic DNA

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tgatcatacg tagatatcac ggc

23

<210> 25

<211> 27

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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27

<210> 26

<211> 32

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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cacaacattt ggactcaact ctcttgtcca cc

32

<210> 27

<211> 32

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 27

ggtggacaag agagttgagt ccaaattgtt g

32

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<223> Description of Artificial Sequence:Synthetic DNA

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tgatcatacgt tagatatcac ggc

23

<210> 29

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<223> Description of Artificial Sequence:Synthetic DNA

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gggtacgtcc tcacattcag tgatcag

27

<210> 30

<211> 34

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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ggcacggtgg gcatggggga ccatatttgc gctc

34

<210> 31

<211> 34

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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gagcgcaaat atggcccccc atgcccacccg tgcc

34

<210> 32

<211> 23

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 32

tgatcatacg tagatatac ac ggc

23

<210> 33

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<212> DNA

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<223> Description of Artificial Sequence:Synthetic DNA

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27

<210> 34

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<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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gaagactgac ggtccccca ggaactctgg tgctggca

39

<210> 35

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

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<210> 36

<211> 23

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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tgatcatacg tagatatcac ggc

23

<210> 37

<211> 1480

<212> DNA

<213> Homo sapiens

<400> 37

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gcagcagtca ggtccaggac tggtaagcc ctcgcagacc ctctcactca cctgtccat 180
ctccggggac agtgtctcta gcaacagtgc tacttggAAC tggatcaggc agtccccatc 240
gagagacctt gagtggtctgg gaaggacata ctacaggtcc aagtggtacgt gtgattatgt 300
aggatctgtg aaaagtgcAA taatcatcaa cccagacaca tccaacaacc agttctccct 360
gcagctgaac tctgtgactc ccgaggacac ggctatatac tactgtacAA gggcacagt 420
gctgggaggg gattaccctt actactacag tatggacgtc tggggccaag ggaccacgg 480
caccgtctct tcagcctcca ccaagggccc atcggtcttc cccctggcgc cctgctccag 540
gagcacctcc gagagcacag cggccctggg ctgcctggtc aaggactact tccccgaacc 600
ggtgacggtg tcgttggact caggcgctct gaccagcggc gtgcacaccc tcccaactgt 660
cctacagtcc tcaggactct actccctcag cagcgtggtg accgtccctt ccagcaactt 720
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gatgaccaag aaccaggtaa gcctgacccgt cctggtaaa ggcttctacc ccagcgcacat 1260
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gctggactca gacggctcct tcttcctcta cagcaagctc accgtggaca agagcagggt 1380
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<210> 38

<211> 474

<212> PRT

<213> Homo sapiens

<400> 38

Met Ser Val Ser Phe Leu Ile Phe Leu Pro Val Leu Gly Leu Pro Trp
1 5 10 15

Gly Val Leu Ser Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu Val
20 25 30

Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Ala Ile Ser Gly Asp Ser
35 40 45

Val Ser Ser Asn Ser Ala Thr Trp Asn Trp Ile Arg Gln Ser Pro Ser
50 55 60

Arg Asp Leu Glu Trp Leu Gly Arg Thr Tyr Tyr Arg Ser Lys Trp Tyr
65 70 75 80

Arg Asp Tyr Val Gly Ser Val Lys Ser Arg Ile Ile Ile Asn Pro Asp
85 90 95

Thr Ser Asn Asn Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Pro Glu
100 105 110

Asp Thr Ala Ile Tyr Tyr Cys Thr Arg Ala Gln Trp Leu Gly Gly Asp
115 120 125

Tyr Pro Tyr Tyr Tyr Ser Met Asp Val Trp Gly Gln Gly Thr Thr Val
130 135 140

Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala
145 150 155 160

Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu
165 170 175

Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly
180 185 190

Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser
195 200 205

Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe
210 215 220

Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr
225 230 235 240

Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro
245 250 255

Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro
260 265 270

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
275 280 285

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp
290 295 300

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
305 310 315 320

Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val
325 330 335

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
340 345 350

Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly
355 360 365

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
370 375 380

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
385 390 395 400

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
405 410 415

Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe
420 425 430

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
435 440 445

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr

450 455 460

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys

465 470

<210> 39

<211> 406

<212> DNA

<213> Homo sapiens

<400> 39

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gctactctgg ctcccagata ccaccggaga aattgtgttg acacagtctc cagccaccct 120
gtctttgtct ccaggggaaa gagccaccct ctcctgcagg gccagtcaga gtgttagcag 180
ctacttagcc tggtagccaac agaaacctgg ccaggctccc aggctcctca tctatgatgc 240
atccaacagg gccactggca tcccagccag gttcagtggc agtgggtctg ggacagactt 300
cactctcacc atcagcagcc tagagcctga agatttgca gtttattact gtcagcagcg 360
tagcaacact ttcggccctg ggaccaaagt ggatataaaa cgtacg 406

<210> 40

<211> 126

<212> PRT

<213> Homo sapiens

<400> 40

Met Glu Ala Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro

1 5 10 15

Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser
20 25 30

Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser
35 40 45

Val Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro
50 55 60

Arg Leu Leu Ile Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala
65 70 75 80

Arg Phe Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
85 90 95

Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser
100 105 110

Asn Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg Thr
115 120 125

<210> 41
<211> 508
<212> DNA
<213> Homo sapiens

<400> 41

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ggactcacca tggagttggg actgagctgg atttccttt tggctatTTT aaaagggtgtc 120
cagtgtgaag tgcagctgg ggagtctgg ggaggcttgg tacagcctgg caggtccctg 180
agactctcct gtgcagcctc tggattcacc tttgatgatt atgccatgca ctgggtccgg 240
caagctccag ggaagggcct ggagtgggtc tcaggtatta gttggaaatag tggtagctg 300
gtgcatgcgg actctgtgaa gggccgattc accatctcca gagacaacgc caagaactcc 360
ctgtatctgc aaatgaacag tctgagagct gaggacacgg ccttgtatta ctgtgcaaga 420
gataggctat ttcggggagt taggtactac ggtatggacg tctggggcca agggaccacg 480
gtcaccgtct cctcagcttag caccaagg 508

<210> 42

<211> 146

<212> PRT

<213> Homo sapiens

<400> 42

Met Glu Leu Gly Leu Ser Trp Ile Phe Leu Leu Ala Ile Leu Lys Gly

1

5

10

15

Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Leu Val Gln

20

25

30

Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe

35

40

45

Asp Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu

50

55

60

Glu Trp Val Ser Gly Ile Ser Trp Asn Ser Gly Ser Leu Val His Ala

65 70 75 80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn

85 90 95

Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu

100 105 110

Tyr Tyr Cys Ala Arg Asp Arg Leu Phe Arg Gly Val Arg Tyr Tyr Gly

115 120 125

Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser

130 135 140

Thr Lys

145

<210> 43

<211> 414

<212> DNA

<213> Homo sapiens

<400> 43

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tctttgtctc caggggaaag agccaccctc tcctgcaggg ccagtcagag tgtagcagc 180
tacttagcct ggtaccaaca gaaacctggc caggctccca ggctcctcat ctatgtgca 240
tccaaacaggg ccactggcat cccagccagg ttcagtggca gtgggtctgg gacagacttc 300
actctcacca tcagcagcct agagcctgaa gatttgcag tttattactg tcagcagcgt 360

agccactggc tcactttcg~~g~~ cggggggacc aagg~~t~~ggaga tcaaacgtac ggtg 414

<210> 44

<211> 129

<212> PRT

<213> Homo sapiens

<400> 44

Met Glu Ala Pro Ala Gln Leu Leu Phe Leu Leu Leu Trp Leu Pro
1 5 10 15

Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser
20 25 30

Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser
35 40 45

Val Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro
50 55 60

Arg Leu Leu Ile Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala
65 70 75 80

Arg Phe Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
85 90 95

Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser
100 105 110

His Trp Leu Thr Phe Gly Gly Thr Lys Val Glu Ile Lys Arg Thr

115

120

125

Val

<210> 45

<211> 462

<212> DNA

<213> Homo sapiens

<400> 45

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ggactactga agccttcgga gaccctgtcc ctcacccgtca ctgtctctgg cggctccatc 180
agcagtcctg gttactacgg gggctggatc cgccagcccc caggaaaggg gctggagtgg 240
attgggagta tctataaaag tgggagcacc taccacaacc cgtccctcaa gagtcgagtc 300
accatatccg tagacacgtc caagaaccag ttctccctga agctgagctc tgtgaccgcc 360
gcagacacgg ctgtgttatta ctgtacgaga cctgttagtac gatatttgg gtggttcgac 420
ccctggggcc aggaaaccct ggtcaccgtc tcctcagcta gc 462

<210> 46

<211> 149

<212> PRT

<213> Homo sapiens

<400> 46

Met Asp Leu Met Cys Lys Lys Met Lys His Leu Trp Phe Phe Leu Leu

1 5 10 15

Leu Val Ala Ala Pro Arg Trp Val Leu Ser Gln Leu Gln Leu Gln Glu
20 25 30

Ser Gly Pro Gly Leu Leu Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys
35 40 45

Thr Val Ser Gly Gly Ser Ile Ser Ser Pro Gly Tyr Tyr Gly Gly Trp
50 55 60

Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile Gly Ser Ile Tyr
65 70 75 80

Lys Ser Gly Ser Thr Tyr His Asn Pro Ser Leu Lys Ser Arg Val Thr
85 90 95

Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser
100 105 110

Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Thr Arg Pro Val Val
115 120 125

Arg Tyr Phe Gly Trp Phe Asp Pro Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Ala Ser
145

<210> 47

<211> 448

<212> DNA

<213> Homo sapiens

<400> 47

agatcttaag caagtgtAAC aactcagagt acgcgggag acccactcag gacacagcat 60
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atgtgccatc cagttgaccc agtctccatc ctccctgtct gcatctgttag gagacagagt 180
caccatcaact tgccgggcaa gtcagggcat tagcagtgct ttagcctgggt atcagcagaa 240
accagggaaa gctcctaAGC tcctgatcta ttaggcctcc aatttgaaaa gtggggtccc 300
atcaaggttc agcggcagtg gatctgggac agatttcaact ctcaccatca gcagcctgca 360
gcctgaagat tttgcaactt attactgtca acagttaat agttaccgaa cgttcggcca 420
agggaccaag gtggaaatca aacgtacg 448

<210> 48

<211> 130

<212> PRT

<213> Homo sapiens

<400> 48

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Trp

1

5

10

15

Leu Pro Gly Ala Arg Cys Ala Ile Gln Leu Thr Gln Ser Pro Ser Ser

20

25

30

Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser

35

40

45

Gln Gly Ile Ser Ser Ala Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys

50 55 60

Ala Pro Lys Leu Leu Ile Tyr Asp Ala Ser Asn Leu Glu Ser Gly Val

65 70 75 80

Pro Ser Arg Phe Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr

85 90 95

Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln

100 105 110

Phe Asn Ser Tyr Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys

115 120 125

Arg Thr

130

<210> 49

<211> 13

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
peptide

<400> 49

Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu Ile

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5

10

<210> 50

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 50

Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu Ile Asn Ser

1

5

10

<210> 51

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 51

Ala Cys Arg Glu Lys Gln Tyr Leu Ile Asn Ser Gln Cys

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5

10

<210> 52

<211> 13

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
peptide

<400> 52

Arg Glu Lys Gln Tyr Leu Ile Asn Ser Gln Cys Cys Ser
1 5 10

<210> 53

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 53

Lys Gln Tyr Leu Ile Asn Ser Gln Cys Cys Ser Leu Cys
1 5 10

<210> 54

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 54

Tyr Leu Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro

1 5 10

<210> 55

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

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Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln

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<210> 56

<211> 13

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peptide

<400> 56

Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu

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<210> 57

<211> 13

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peptide

<400> 57

Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val Ser

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<210> 58

<211> 13

<212> PRT

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<223> Description of Artificial Sequence:Synthetic
peptide

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Ser Leu Cys Gln Pro Gly Gln Lys Leu Val Ser Asp Cys
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<210> 59

<211> 13

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<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic
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Cys Gln Pro Gly Gln Lys Leu Val Ser Asp Cys Thr Glu
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<210> 60

<211> 13

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<223> Description of Artificial Sequence:Synthetic
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Pro Gly Gln Lys Leu Val Ser Asp Cys Thr Glu Phe Thr
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<210> 61

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<212> PRT

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<400> 61

Gln Lys Leu Val Ser Asp Cys Thr Glu Phe Thr Glu Thr
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<210> 62

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Leu Val Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys

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<210> 63

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<210> 64

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<210> 66

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<210> 67

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Cys Leu Pro Cys Gly Glu Ser Glu Phe Leu Asp Thr Trp

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peptide

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<210> 72

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peptide

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<210> 73

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peptide

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Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His Lys
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<210> 74

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peptide

<400> 74

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<210> 75

<211> 13

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<223> Description of Artificial Sequence:Synthetic
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1 5 10

<210> 76

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<211> 13

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<210> 82

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<210> 83

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peptide

<400> 83

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peptide

<400> 84

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<210> 85

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peptide

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<210> 86

<211> 13

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peptide

<400> 86

Gly Thr Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu

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<210> 87

<211> 13

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peptide

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<210> 88

<211> 13

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<223> Description of Artificial Sequence:Synthetic
peptide

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<210> 89

<211> 13

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<400> 89

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<210> 90

<211> 13

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peptide

<400> 90

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1 5 10

<210> 91

<211> 13

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<400> 91

Cys Glu Glu Gly Trp His Cys Thr Ser Glu Ala Cys Glu

1 5 10

<210> 92

<211> 13

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Glu Gly Trp His Cys Thr Ser Glu Ala Cys Glu Ser Cys

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<210> 93

<211> 13

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peptide

<400> 93

Trp His Cys Thr Ser Glu Ala Cys Glu Ser Cys Val Leu

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<210> 94

<211> 13

<212> PRT

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peptide

<400> 94

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<210> 95

<211> 13

<212> PRT

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<223> Description of Artificial Sequence:Synthetic
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Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys

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<210> 96

<211> 13

<212> PRT

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<223> Description of Artificial Sequence:Synthetic
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<210> 97

<211> 13

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peptide

<400> 97

Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly Phe

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<210> 98

<211> 13

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peptide

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<210> 99

<211> 13

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<400> 99

Leu His Arg Ser Cys Ser Pro Gly Phe Gly Val Lys Gln
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peptide

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1 5 10

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peptide

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Gly Val Ser Asp Thr Ile Cys Glu Pro Cys Pro Val Gly

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<210> 108

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peptide

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<210> 109

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<400> 109

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<210> 110

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<400> 110

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peptide

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<211> 13

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<210> 113

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<210> 114

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<400> 114

Phe Ser Asn Val Ser Ser Ala Phe Glu Lys Cys His Pro

1 5 10

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<400> 115

Asn Val Ser Ser Ala Phe Glu Lys Cys His Pro Trp Thr

1 5 10

<210> 116

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<400> 116

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<400> 117

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<210> 118

<211> 13

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<400> 118

Glu Lys Cys His Pro Trp Thr Ser Cys Glu Thr Lys Asp

1 5 10

<210> 119

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<400> 119

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1 5 10

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<210> 121

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<400> 121

Thr Ser Cys Glu Thr Lys Asp Leu Val Val Gln Gln Ala
1 5 10

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<211> 13

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peptide

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<210> 123

<211> 13

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<400> 123

Thr Lys Asp Leu Val Val Gln Gln Ala Gly Thr Asn Lys

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<210> 124

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<400> 124

Asp Leu Val Val Gln Gln Ala Gly Thr Asn Lys Thr Asp

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<210> 125

<211> 13

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<400> 125

Val Val Gln Gln Ala Gly Thr Asn Lys Thr Asp Val Val

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<210> 126

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<210> 127

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peptide

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Lys Thr Asp Val Val Cys Gly Pro Gln Asp Arg Leu Arg

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<212> DNA

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<212> PRT

<213> Homo sapiens

<400> 132

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Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Ala Ile Ser Gly Asp Ser

35 40 45

Val Ser Ser Asn Ser Ala Thr Trp Asn Trp Ile Arg Gln Ser Pro Ser

50 55 60

Arg Asp Leu Glu Trp Leu Gly Arg Thr Tyr Tyr Arg Ser Lys Trp Tyr

65 70 75 80

Arg Asp Tyr Val Gly Ser Val Lys Ser Arg Ile Ile Ile Asn Pro Asp

85 90 95

Thr Ser Asn Asn Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Pro Glu

100 105 110

Asp Thr Ala Ile Tyr Tyr Cys Thr Arg Ala Gln Trp Leu Gly Gly Asp

115 120 125

Tyr Pro Tyr Tyr Tyr Ser Met Asp Val Trp Gly Gln Gly Thr Thr Val

130 135 140

Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala

145 150 155 160

Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu

165 170 175

Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly

180 185 190

Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser

195 200 205

Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe

210 215 220

Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr

225 230 235 240

Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro

245 250 255

Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro

260 265 270

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys

275 280 285

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp

290 295 300

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu

305 310 315 320

Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val

325 330 335

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn

340 345 350

Lys Gly Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly

355 360 365

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu

370 375 380

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr

385 390 395 400

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn

405 410 415

Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe

420 425 430

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn

435 440 445

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr

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465 470

<210> 133

<211> 696

<212> DNA

<213> Homo sapiens

<400> 133

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<212> PRT

<213> Homo sapiens

<400> 134

Met Glu Ala Pro Ala Gln Leu Leu Phe Leu Leu Leu Trp Leu Pro

1

5

10

15

Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser

20

25

30

Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser

35

40

45

Val Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro

50

55

60

Arg Leu Leu Ile Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala

65

70

75

80

Arg Phe Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser

85

90

95

Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser

100

105

110

Asn Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg Thr Val Ala

115

120

125

Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser

130

135

140

Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu
145 150 155 160

Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser
165 170 175

Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu
180 185 190

Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
195 200 205

Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys
210 215 220

Ser Phe Asn Arg Gly Glu Cys
225 230

<210> 135

<211> 1407

<212> DNA

<213> Homo sapiens

<400> 135

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<210> 136

<211> 468

<212> PRT

<213> Homo sapiens

<400> 136

Met Glu Leu Gly Leu Ser Trp Ile Phe Leu Leu Ala Ile Leu Lys Gly

1

5

10

15

Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
20 25 30

Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35 40 45

Asp Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50 55 60

Glu Trp Val Ser Gly Ile Ser Trp Asn Ser Gly Ser Leu Val His Ala
65 70 75 80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn
85 90 95

Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu
100 105 110

Tyr Tyr Cys Ala Arg Asp Arg Leu Phe Arg Gly Val Arg Tyr Tyr Gly
115 120 125

Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser
130 135 140

Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr
145 150 155 160

Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro
165 170 175

Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val

180

185

190

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser

195

200

205

Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr

210

215

220

Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val

225

230

235

240

Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val

245

250

255

Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu

260

265

270

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser

275

280

285

His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu

290

295

300

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr

305

310

315

320

Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn

325 330 335

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Ser

340 345 350

Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln

355 360 365

Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val

370 375 380

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val

385 390 395 400

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Thr Thr Pro

405 410 415

Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr

420 425 430

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val

435 440 445

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu

450 455 460

Ser Pro Gly Lys

465

<210> 137

<211> 702

<212> DNA

<213> Homo sapiens

<400> 137

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<210> 138

<211> 233

<212> PRT

<213> Homo sapiens

<400> 138

Met Glu Ala Pro Ala Gln Leu Leu Phe Leu Leu Leu Trp Leu Pro

1

5

10

15

Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser

20 25 30

Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser
35 40 45

Val Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro
50 55 60

Arg Leu Leu Ile Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala
65 70 75 80

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
85 90 95

Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser
100 105 110

His Trp Leu Thr Phe Gly Gly Thr Lys Val Glu Ile Lys Arg Thr
115 120 125

Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu
130 135 140

Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro
145 150 155 160

Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly
165 170 175

Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr

180

185

190

Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His

195

200

205

Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val

210

215

220

Thr Lys Ser Phe Asn Arg Gly Glu Cys

225

230

<210> 139

<211> 1425

<212> DNA

<213> Homo sapiens

<400> 139

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aggagcttgg gcacgaagac ctacaccc 720
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gtggacaaga gagttgagtc caaatatggt ccccatgcc caccatgccc agcacctgag 780
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aaccactaca cacagaagag cctctccctg tctctggta aatga 1425

<210> 140

<211> 474

<212> PRT

<213> Homo sapiens

<400> 140

Met Asp Leu Met Cys Lys Lys Met Lys His Leu Trp Phe Phe Leu Leu

1

5

10

15

Leu Val Ala Ala Pro Arg Trp Val Leu Ser Gln Leu Gln Leu Gln Glu

20

25

30

Ser Gly Pro Gly Leu Leu Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys

35

40

45

Thr Val Ser Gly Gly Ser Ile Ser Ser Pro Gly Tyr Tyr Gly Gly Trp

50 55 60

Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile Gly Ser Ile Tyr
65 70 75 80

Lys Ser Gly Ser Thr Tyr His Asn Pro Ser Leu Lys Ser Arg Val Thr
85 90 95

Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser
100 105 110

Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Thr Arg Pro Val Val
115 120 125

Arg Tyr Phe Gly Trp Phe Asp Pro Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro
145 150 155 . 160

Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val
165 170 175

Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala
180 185 190

Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly
195 200 205

Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly

210	215	220	
225	230	235	240
245	250	255	
260	265	270	
275	280	285	
290	295	300	
305	310	315	320
325	330	335	
340	345	350	
355	360	365	

Thr Lys Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys
225 230 235 240

Val Asp Lys Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys
245 250 255

Pro Ala Pro Glu Phe Glu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
260 265 270

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
275 280 285

Val Val Val Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp
290 295 300

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
305 310 315 320

Glu Gln Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
325 330 335

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
340 345 350

Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
355 360 365

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu

370 375 380

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr

385 390 395 400

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn

405 410 415

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe

420 425 430

Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn

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Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr

450 455 460

Gln Lys Ser Leu Ser Leu Ser Leu Gly Lys

465 470

<210> 141

<211> 708

<212> DNA

<213> Homo sapiens

<400> 141

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<210> 142

<211> 235

<212> PRT

<213> Homo sapiens

<400> 142

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Trp

1

5

10

15

Leu Pro Gly Ala Arg Cys Ala Ile Gln Leu Thr Gln Ser Pro Ser Ser

20

25

30

Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser

35

40

45

Gln Gly Ile Ser Ser Ala Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys

50

55

60

Ala Pro Lys Leu Leu Ile Tyr Asp Ala Ser Asn Leu Glu Ser Gly Val
65 70 75 80

Pro Ser Arg Phe Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
85 90 95

Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
100 105 110

Phe Asn Ser Tyr Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
115 120 125

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
130 135 140

Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
145 150 155 160

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
165 170 175

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
180 185 190

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
195 200 205

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
210 215 220

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys

225

230

235